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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,403	09/16/2004	Alfred Albert Mancini	13DV-13098-3	5402
30952 7590 02/20/2007 HARTMAN AND HARTMAN, P.C. 552 EAST 700 NORTH VAIPARAISO, IN 46383			EXAMINER AUSTIN, AARON	
			ART UNIT 1775	PAPER NUMBER

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/711,403

Applicant(s)

MANCINI ET AL.

Examiner

Aaron S. Austin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coffinberry (U.S. Patent No. 5,891,584) in view of Hikino (Japanese Patent No. 356030514A), and further in view of Priceman (EP 0304176 A2).

Coffinberry teaches a hydrocarbon fluid containment articles through which hydrocarbon fuels flow wherein the surface for contacting the fluid is a diffusion barrier material, a catalytic material, or combination thereof coated on a metal substrate, such as aircraft turbine engines components including heat exchangers (column 4, lines 28-36). The diffusion barrier inhibits interdiffusion and catalyzes thermal decomposition of the fuel to promote formation of a loosely-adherent or substantially non-adherent coke (column 11, line 49 through column 12, line 54). The diffusion barrier may be a ceramic, such as tantala, silica, or other oxides, and may be overlaid with the catalytic material (column 11, lines 11-34; column 19, line 55; and claim 6). Thicknesses of the diffusion barrier layer range from about 0.1 to 5.0 microns (column 13, lines 40-56). One example was conducted using jet fuel at 700 F (371 °C), the equivalent of about 345 °C (column 19, lines 43-48).

Coffinberry does not teach the catalytic material as being platinum nor a second coating system on an opposing surface of the substrate.

Coffinberry does discuss prior art, namely Hikino, wherein fuel tar collecting on a surface coated with platinum may be removed when heated to 350 °C for an hour (column 3, lines 40-50 of Coffinberry). Therefore, as Hikino clearly teaches platinum is an effective catalytic material useful for prevention of adhesion of fuel tar to a surface, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use the platinum layer of Hikino as either the catalytic material or in association with the catalytic material of Coffinberry overlaying the diffusion barrier layer.

Neither Coffinberry nor Hikino teach a second coating system on an opposing surface of the substrate.

Priceman teaches a coated metal composite article, such as a gas turbine engine (column 3, lines 6-7), including afterburner nozzles thereof (column 1, line 46). Opposite surfaces of the substrate have an intermetallic layer and ceramic layer thereon (column 4, lines 47-49; Figure 1) imparting "improved operating temperature and life capabilities at temperature and, where necessary, improved resistance to premature catastrophic failure resulting from chemical/metallurgical reactions with other materials" (column 2, lines 44-50). Therefore, as it is clearly taught by Priceman that forming a coating on either surface of the substrate provides improved life capabilities and resistance to failure, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply coatings to both surfaces of the substrate

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taught by Coffinberry in view of Hikino with a reasonable expectation of success. Thus the claimed invention as a whole is *prima facie* obvious over the combined teachings of the prior art.

Regarding claim 16, Priceman teaches the single step of application of an intermetallic layer to both sides of the substrate prior to the subsequent step of heating of the coated substrate (column 5, lines 40-43). It would be obvious to one of ordinary skill in the art to apply the layer to both sides simultaneously. Please note, claim 16 includes product by process language. The above arguments establish a rationale tending to show the claimed product is the same as what is taught by the prior art. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 227 USPQ 964,966. Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983), MPEP 2113. Thus the claimed invention as a whole is *prima facie* obvious over the combined teachings of the prior art.

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Regarding claim 17, Coffinberry teaches roughness of the substrate is detrimental to the CVD application process as it reduces adhesion of a CVD applied coating and therefore a roughness is undesirable (column 15, line 43 and lines 55-57). As noted by applicant in the reply of 1/17/07 page 12, CVD coatings in the dimensions taught by Coffinberry will have a surface roughness that corresponds to that of the substrate to which it is applied. Therefore, as Coffinberry teaches a roughness of any size is detrimental to CVD deposited coatings, it would be obvious to one of ordinary skill in the art at the time of the claimed invention to form the coating having a roughness not greater than about one micrometer.

Response to Arguments

Applicant's arguments filed 1/17/07 have been fully considered but they are not persuasive.

First, applicant argues the combination of Coffinberry and Hikino does not suggest an outermost layer consisting essentially of platinum as Hikino teaches use of an inorganic binder with platinum. The transitional phrase "consisting essentially of" limits the scope of a claim to the specified materials or steps "and those that do not materially affect the basic and novel characteristic(s)" of the claimed invention. In re Herz, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976). If an applicant contends that additional steps or materials in the prior art are excluded by the recitation of "consisting essentially of," applicant has the burden of showing that the introduction of additional steps or components would materially change the characteristics of

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applicant's invention. In re De Lajarte, 337 F.2d 870, 143 USPQ 256 (CCPA 1964). In the present case, the platinum layer of Hikino is used for the same purpose as in the present application, namely a catalyst for removal of carbonaceous gum substances, the presence of other components in the layer taught by Hikino is not considered to materially change the characteristics of applicant's invention.

Second, applicant argues none of the references cited teaches a coating surface finish that replicates the substrate finish to which it is applied. Applicant points to paragraph [29] in support of this newly added limitation. In review of paragraph [29], the claimed relationship between finishes is due to the preferred use of CVD as it allows for the coating system to replicate the underlying substrate finish. As Coffinberry teaches CVD deposited coatings, the claimed relationship is expected to be identical to that claimed and taught by applicant.

Third, with respect to claim 17, applicant argues the interpretation of the claim was incorrect as the thickness of a coating does not limit its surface roughness. This argument was found to be convincing, however, upon further consideration, Coffinberry teaches roughness of the substrate is detrimental to the CVD application process as it reduces adhesion of a CVD applied coating and therefore a roughness is undesirable (column 15, line 43 and lines 55-57). As noted by applicant in the reply of 1/17/07 page 12, CVD coatings in the dimensions taught by Coffinberry will have a surface roughness that corresponds to that of the substrate to which it is applied. Therefore, as Coffinberry teaches a roughness of any size is detrimental to CVD deposited coatings, it would be

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obvious to one of ordinary skill in the art at the time of the claimed invention to form the coating having a roughness not greater than about one micrometer.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron S. Austin whose telephone number is (571) 272-8935. The examiner can normally be reached on Monday-Friday: 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ASA


JENNIFER MCNEIL
SUPERVISORY PATENT EXAMINER
2/13/07